

1 detailed explanation of the shredding process, and the step of *coating the recycled fibers to enhance*
2 *their value as an absorbent* is conspicuously absent. If applicants had perceived that it were
3 necessary to apply such an absorbent coating, that coating step would have been positively recited in
4 the specification.

5 It should be noted that the specification makes it very clear that the use of delustered synthetic
6 fibers is a key aspect employed to provide absorbency. Several delustering techniques are disclosed,
7 including etching fibers, coating fibers with a low refractive polymer, and using titanium dioxide
8 during melt-spinning of the fibers (see page 13, second and third paragraphs). However, such
9 delustering techniques are only necessary *if the synthetic fibers have not already been delustered*.
10 The specification quite clearly discloses that where the source of the synthetic fibers are textile or
11 fabric waste, *the delustering process has already occurred*, because almost all synthetic fibers used in
12 fabrics and textiles is delustered before being used to make the fabric/textile. Note that the pending
13 claims specifically recite that the fabric textile waste *before* the sorting and shredding process
14 comprises delustered fibers, thus additional delustering is not needed (applicants' specification notes
15 that using already delustered materials is a benefit, since processing of the material is simpler because
16 no delustering is required; page 17, third paragraph). Clearly, where the source of the fibers is fabric
17 or textile scrap comprising delustered fibers, the delustering process as disclosed in the specification
18 is not applied to the recycled fibers after shredding, and thus, the disclosed delustering process cannot
19 be equivalent to *coating the discrete recycled fibers (obtained by shredding fabric/textile waste) to*
20 *enhance their value as an absorbent* (i.e., the recycled fibers do not need to be coated after being
21 shredded/recycled, because they were already delustered before they were initially used to make
22 fabric/textiles).

23 The cited art discloses the following steps: using pure virgin delustered fibers as an absorbent
24 (JP '187); sorting garbage to separate paper from plastics, recycling the plastics, and shredding the
25 paper for use as an absorbent (DE '899 - this reference also specifically teaches that synthetics should
26 be kept out of the natural fiber waste stream); and using shoddy (a mixture of natural and synthetic
27 fibers, generally produced by shredding textile and fabric waste) as an absorbent, but only after
28 coating the discrete recycled fibers with a polymer that enhances the absorbent properties of the
29 fibers (O'Donnell; also, O'Donnell suggests using shoddy with more natural fibers than synthetic
30

1 fibers). Combining these references does not appear to yield a method equivalent to that claimed by
2 applicants. Furthermore, there is no motivation for combining these references.

3 Applicants specifically claim sorting fabric/textile waste that includes natural fibers and
4 delustered synthetic fibers to reduce the amount of natural fibers present (so the majority of the fibers
5 are synthetic), shredding the fibers without coating the fibers to enhance their absorptive properties,
6 and using the shredded fibers to absorb hydrocarbons. Combining the above references would appear
7 to require the inclusion of O'Donnell's coating step; thus, such a combination cannot achieve a
8 method equivalent to applicants'. There appears to be no reasonable basis, absent hindsight, for
9 modifying the references to eliminate O'Donnell's coating step. Note that O'Donnell is the only
10 reference teaching that mixed synthetic and natural fibers can be used as an absorbent, and only then,
11 after they have been shredded *and coated* to improve their absorbency.

12 With respect to the sorting step, the Examiner has argued that sorting fabric/textile waste
13 would fall under the routine experimentation category, such that an artisan of ordinary skill would
14 have been motivated to experiment with different ratios of natural and synthetic fibers to obtain an
15 optimal absorbent product. However, such a position fails to recognize that none of the references
16 indicate that such sorting was *known in the prior art*. O'Donnell doesn't teach or suggest any sorting
17 process. O'Donnell simply indicates that readily available shoddy (having more natural fibers than
18 synthetic fibers) can be used as an absorbent, but only after being coated to enhance its absorptive
19 properties. DE '899 does teach a sorting process, but it must be recognized that DE '899 discloses
20 sorting *household refuse* into different waste streams, such as paper and plastic. The paper stream is
21 clearly fibrous, and DE '899 specifically teaches the paper stream can be shredded and used as a fuel
22 or absorbent. Household plastics are not generally fibrous (polymers can be made into fibers, but
23 household refuse certainly suggests plastic in non-fibrous forms, such as plastic bottles, plastic food
24 containers, plastic toys, etc). Thus, it is not reasonable to assert that DE '899 teaches or suggests that
25 fibrous waste streams should be sorted into natural fibers and synthetic fibers. Since the prior art
26 does not teach or suggest sorting a fibrous waste stream according to natural/synthetic fiber content,
27 it is *not* simply a matter of routine experimentation to vary the relative percentages of natural and
28 synthetic fibers during such sorting. The step of sorting the textile/fabric scrap for shredding to
29 achieve a majority of synthetic fibers for use as an absorbent simply is not taught or suggested in the
30 art.

1 In summary, combining the cited art in the manner suggested by the Examiner would result in
2 generating shoddy, require treating the shoddy with a resin to provide absorbency, curing the
3 resin/shoddy mixture, pickering or grinding the treated shoddy (see O'Donnell, first paragraph of
4 column 4), and then using the treated shoddy as an absorbent for oil as disclosed by Mendes or
5 JP '187. Such a method is not equivalent to the recitation in applicants' independent Claims 57 and
6 71, because each of those claims recites sorting textile waste to control an amount of natural fibers
7 present in the absorbent, and neither claim treats the recycled fibers with a resin before using the
8 fibers as an absorbent.

9 Finally, the previously submitted declaration by Jerry Brownstein indicates that there exists in
10 the textile industry a long felt need for alternative uses for synthetic fabric scrap and synthetic fiber
11 scrap, which when reduced to fiber is referred to as poly shoddy. While O'Donnell offered a
12 potential use for shoddy, it appears that the additional treatment required by O'Donnell (coating the
13 shoddy with a resin, curing the resin, and then additional grinding or pickering of the treated shoddy)
14 increases the complexity and cost of generating an absorbent from shoddy to the point that
15 O'Donnell's technique does not result in an economically beneficial alternative use for shoddy.
16 Significantly, applicants' claimed method of pre-sorting (to limit the amount of natural fiber) and
17 then shredding textile waste enables the shredded fiber to be used as an effective absorbent *without*
18 the additional resin coating and processing steps required by O'Donnell's technique, making
19 applicants' claimed method a viable alternative use for poly shoddy.

20 Accordingly, Claims 57 and 71 are patentable over the references cited and the rejection of
21 these claims should be withdrawn. Because dependent claims are patentable for at least the same
22 reasons as the claims upon which they depend, each claim dependent upon Claims 57 and 71 are
23 patentable for at least the same reasons noted above. Therefore, the rejection of Claims 57, 60, 65-
24 70, and 71 (Claims 61, 64, and 91-95 having been canceled) as being obvious in view of the above
25 noted combination of references should be withdrawn.

26 Claim 65 specifically recites that the sorting of the raw material (the textile waste) should be
27 carried out such that the resulting sorbent (i.e., the mass) comprises less than about 10% natural fiber.
28 The Examiner has not cited any reference that teaches or suggests that a recycled delustered synthetic
29 fiber based sorbent should comprise less than about 10% natural fiber. Applicants' empirical studies
30 indicated that the quality of the absorbent increased as the amount of natural fiber decreased. That

relationship between absorbency and amount of natural fiber is not taught or suggested in the cited art, nor is applicants' discovery of that relationship a product of routine experimentation of a known process, because the cited art does not teach or suggest sorting fibrous waste based on the content of a fabric/textile with respect to natural and synthetic fibers.

Claims Rejected as being Obvious over Mendes in View of JP '187, DE '899, O'Donnell & Mesek

The Examiner has rejected Claims 58, 59, and 63 as being obvious over Mendes in view of JP '187 and O'Donnell, further in view of U.S. Patent No. 4,045,833 (Mesek). The Examiner notes that the combination of Mendes in view of JP '187 and further in view of O'Donnell does not teach employing both long and short fibers in a non-woven fabric to enhance the strength structural stability and integrity of the fabric, but asserts that Mesek discloses using long and short fibers in such a manner. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to combine the teachings of Mendes and JP '187 with O'Donnell and Mesek to achieve an equivalent of what applicants recite in these claims. Applicants respectfully disagree for the following reasons.

As discussed in detail above, Claim 57 is patentably distinguishable over the cited art, and Mesek's teaching are not relevant to the patentability of that independent claim. Claims 58, 59, and 63 are each ultimately dependent upon Claim 57. Because dependent claims are patentable for at least the same reasons as the claims upon which they depend, each claim dependent upon Claim 57 is patentable for at least the same reasons noted above. Accordingly, the rejection of Claims 58, 59, and 63 as being obvious in view of the above cited combination of references should be withdrawn.

Secondary Considerations Raised to Traverse the Rejections under 35 U.S.C. § 103

As indicated in MPEP § 2141, objective evidence of secondary considerations, such as unexpected results, commercial success, long felt need, failure of others to solve that need, copying by others, licensing, and skepticism of experts regarding an available solution to the problem are relevant to the issue of obviousness and must be considered in every case in which they are present. When evidence of any of these secondary considerations is submitted, the Examiner must evaluate the evidence.

In addition to the above discussion, which points out that the cited art fails to support rejection of applicants' claims as obvious over the cited art, applicants previously submitted a Declaration by Jerry Brownstein that provides objective evidence that the present invention meets a long felt need.

1 Jerry Brownstein's Declaration provides evidence that the textile industry regularly disposes of
2 synthetic fabric/synthetic fibers as solid waste, because the known economic uses for such material,
3 primarily the manufacture of non-woven sound deadening mats for automobiles, creates a demand
4 that is much less than the supply of such material. Apparently, O'Donnell's sorbent material, *which*
5 *requires coating fibers with a resin*, has not been accepted by the industry, and the surplus of
6 reprocessed fibers over available uses for them has not appreciably diminished. Indeed, it appears
7 that O'Donnell's technique is primarily directed at reusing a waste left over from producing acoustic
8 panels from shoddy (see column 6, lines 32-45) as an absorbent (noting that acoustic panels are
9 already made from shoddy), rather than representing a new use for shoddy. Thus, there currently
10 exists a long felt need for alternative uses of recycled synthetic fibers, and the previously submitted
11 Declaration is relevant in showing that applicants' claims are NOT obvious, but instead, are
12 patentable.

13 In view of the amendments and the remarks submitted above, as well as the previously
14 submitted Declaration, it is clear that all of the claims in the application define patentable subject
15 matter that is neither anticipated nor obvious in view of the prior art cited. For this reason, the
16 Examiner is requested to issue the present application without delay. If there are any questions that
17 might be addressed by a telephone interview, the Examiner is invited to telephone applicants'
18 undersigned attorney, at the number listed below.

19 Respectfully submitted,

20
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